

### ABSTRACT OF THE DISCLOSURE

An interior permanent magnet synchronous motor wherein cogging torque and torque pulsation during feeding of electricity can be both restrained.  $2p$  ( $p$ : a positive integer of 1 or more) magnetic salient pole sections consists of two groups of magnetic salient pole sections, a first group of which consists of  $p$  magnetic salient pole sections arranged so as to be spaced at equal intervals in the peripheral direction while having one magnetic salient pole section of a second group interposed between each of two adjacent magnetic salient pole sections, and the second group of which consists of  $p$  magnetic salient pole sections arranged so as to be spaced at equal intervals in the peripheral direction while having one magnetic salient pole section of the first group interposed between each of two adjacent magnetic salient pole sections. The open angle  $\alpha 1$  of the  $p$  magnetic salient pole sections of the first group is smaller than the open angle  $\alpha 2$  of the  $p$  magnetic salient pole sections of the second group. Then the open angles  $\alpha 1$  and  $\alpha 2$  are set to satisfy the expression  $\alpha 2 - \alpha 1 \approx 2\beta - (2n-1)\tau s$ .  $n$  is a natural number.  $\beta$  is an angle between virtual center lines CL1 and CL2 of two adjacent magnetic salient pole sections which extend from the center of the shaft through the center of each salient magnetic pole sections.  $\tau s$  is the slot pitch of the stator core.